

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,596	SAYYARRODSARI ET AL.	
	Examiner	Art Unit	
	Thomas K. Pham	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to amendment filed 8/18/2006.
2.  The allowed claim(s) is/are 1-13, 15-30 and 32-34.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

***Reasons for Allowance***

1. Claims 1-13, 15-30 and 32-34 are allowed.
2. The following is an examiner's statement of reasons for allowance:

While Martin (Patent No. 5,933,345) discloses controlling the operation of a plant by predicting a change in the dynamic input values to the plant for effecting a change in the output from a current output value at a first time to a desired output value at a second time. The system includes a dynamic predictive model that uses the current input value and the desired output value to predict a plurality of input values at different time positions and defining a dynamic operation path of the plant. Martin does not teach the manipulated variable comprises a magnetic field strength, shape, location and/or orientation, and the controlled variables comprise particle positions within the particle accelerator; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

And Piche (Patent No. 6,278,899) teaches an on-line optimizer for optimizing the operation of a plant with respect to predetermined operating parameters. The optimizer includes a steady state optimizer for modeling plant's operation and for receiving target plant output values and optimization criteria. The system also includes a non-linear dynamic model for modeling and estimating the plant output values. Piche does not teach the manipulated variable comprises a magnetic field strength, shape, location and/or orientation, and the controlled variables comprise particle positions within the particle accelerator; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

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The prior art of record fails to teach or fairly suggest to one of ordinary skill in the art at the time of the invention, in conjunction with all the other claimed limitations, a system and method for controlling particle accelerators having all the claimed features of applicant's instant invention, specifically including: the manipulated variable comprises a magnetic field strength, shape, location and/or orientation, and the controlled variables comprise particle positions within the particle accelerator, etc., as set forth in the claims.

Also, there is no motivation to combine the Martin reference with the Piche reference to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (571) 272-3689, Monday to Thursday from 6:30 AM - 5:00 PM EST or contact Supervisor *Mr. Anthony Knight* at (571) 272-3687.

**Thomas Pham**

Patent Examiner



October 14, 2006